EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REPLACEMENT OF BRIDGE #47, RELATED CHANNEL WORK AND INCIDENTALS. BRIDGE #47 IS AN EXISTING 72" CORRUGATED METAL PLATE PIPE CULVERT, WHICH WILL BE REPLACED WITH A 12' SPAN PRECAST CONCRETE BOX CULVERT TO CONVEY THE UNNAMED BROOK BENEATH VT ROUTE 30. BRIDGE #47 IS LOCATED IN THE TOWN OF WINHALL ON VT ROUTE 30, 2.3 MILES SOUTH OF THE JUNCTION WITH VERMONT ROUTE 11.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW AND STAGING AREAS, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 0.65 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE PROJECT SITE IS WOODED MOUNTAINOUS TERRAIN. VT ROUTE 30 IS WITHIN THE PROJECT SITE. THERE ARE GRAVEL DRIVES ON FOUR SIDES OF THE PROJECT. THERE ARE OVERHEAD UTILITIES THAT WILL BE RELOCATED PRIOR TO THE START OF THE PROJECT.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE WATER SOURCE ON THE PROJECT SITE IS AN UNNAMED BROOK. THE PROJECT IS IN THE CONNETICUT RIVER - BELLOWS FALLS TO VERNON DAM DRAINAGE BASIN. THE TOTAL CONTRIBUTING DRAINAGE AREA IS 0.8 SQ. MI. THERE IS A POND APPROXIMATELY 1000 FT UPSTREAM. DUE TO THE NATURE OF THE SURROUNDING ROADWAY TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF FROM THE SURROUNDING SLOPES, ROADWAY DITCHES AND THE ROADWAY OVER TOP OF CULVERT. THERE ARE CLASS II WETLANDS ON THE NORTH SIDE OF THE PROJECT AT THE OUTLET. SEE THE PROJECT IMPACTS PLANS.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF OPEN WOODLAND, WITH MOSSY UNDERGROWTH ON THE BANKS OF THE BROOK. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS RELATED TO THE EXCAVATION REQUIRED FOR THE INSTALLATION OF THE CULVERT, HEADWALLS, WINGWALLS, STONE FILL, AND TEMPORARY ACCESS. UPON PROJECT COMPLETION, THE CHANNEL AND DISTURBED AREAS WITH SLOPES GREATER THAN 2:1 WILL BE ARMORED WITH STONE FILL TYPE III AS SPECIFIED ON THE PLANS.DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE FOR THE COUNTY OF ORLEANS, VERMONT. SOILS ON THE PROJECT SITE ARE MONADNOCK FINE SANDY LOAM, "K FACTOR" = 0.20. THE SOIL IS CONSIDERED LOW EROSION POTENTIAL DUE TO K-VALUE. THE SOIL "K FACTOR" FOR THE EXACT PROJECT LOCATION WAS NOT AVAILABLE; THEREFORE THE ADJACENT SOIL "K FACTOR" WAS USED.

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:
0.0-0.23 = LOW EROSION POTENTIAL
0.24-0.36 = MODERATE EROSION POTENTIAL
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO
HISTORICAL OR ARCHEOLOGICAL AREAS: NO
PRIME AGRICULTURAL LAND: NO
THREATENED AND ENDANGERED SPECIES: NO
WATER RESOURCE: UNNAMED BROOK
WETLANDS: THERE ARE WETLANDS AT THE OUTLET OF THE STRUCTURE. SEE THE PROJECT IMPACTS PLANS.

1.3 RISK EVALUATION

THIS PROJECT DOES NOT FALL UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES. SHOULD CHANGES PRIOR TO OR DURING CONSTRUCTION RESULT IN ONE OR MORE ACRES OF EARTH DISTURBANCE OR SHOULD THE PROJECT BECOME PART OF A LARGER PLAN OF DEVELOPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES. STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES.
THE PROJECT WILL BE CONSTRUCTED IN PHASES WITH SLIDE RAIL AS EXCAVATION SUPPORT.

THE STREAM DIVERSION CONSISTS OF A SHEET PILE COFFER DAM AT THE UPSTREAM END OF THE CULVERT TO CREATE A CONTAINMENT ADAQUATE ENOUGH FOR A 6" PUMP TO DRAW FROM. THE SUCTION POOL LEVEL WILL BE MAINTAINED BY THE PUMP UNDER NORMAL FLOW CONDITIONS. DURING A STORM EVENT THE STREAM WILL FLOW OVER THE COFFER DAM BACK TO THE EXISTING PIPE AND OR NEW CULVERT TO THE DOWNSTREAM OUTLET. THE DISCHARGE FROM THE PUMP DISCHARGE WILL BE SLEEVED AND BURIED UNDER THE ROAD A FEW FEET DAYLIGHTING TO FLOW BACK TO THE STREAM.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR'S PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDED SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCITON SITE.

THE PROJECT AREA IS RELATIVELY FLAT AROUND THE ROADWAY WITH MINIMAL OFF-SITE RUNOFF FLOWING THROUGH THE SITE. THERFORE DIVERSION MEASURES WILL NOT BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

STONE CHECK DAMS WILL BE INSTALLED AS NEEDED AND AS DIRECTED BY THE ENGINEER.

1.4.7 CONSTRUCT PERMANENT CONTROLS

THERE ARE NO PERMANENT STORMWATER TREATMENT DEVICES TO BE INSTALLED WITH THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

SEDIMENT CONTAINMENT BAGS WILL BE UTILIZED ON THE SLOPE. AN AREA WILL BE EXCAVATED TO ALLOW THE BAG TO SIT LEVEL.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS.

STATE OF VERMONT
RONALD K. BELL
No. 6594
REGISTERED
PROFESSIONAL ENGINEER

Ronald K. Bell

REV. NO.	DATE:

BRENAUD BROS. INC.
285 FT. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX.(802) 257-7508

SHEET NAME: EPSC NARRATIVE BRIDGE 47
PROJECT NAME: WINHALL
PROJECT NO: STP CULV (31)
DRAWN BY: CE
CHK'D BY:
DATE: 06/22/2015
SHEET NO. 1
OF 8

1.5 SEQUENCE AND STAGING

1.5.1a CLEARING AND GRUBING
PDF FENCE PER PLANS
SILT FENCE PER PALNS

1.5.1b STREAM DIVERSION
MAINTENANCE PUMP SET UP
PROTECTED DISCHARGE
SHEET PILE COFFER DAM

1.5.1c EXCAVATION
STOCKPILE PROTECTION
TRACKING PAD
LOCALIZED DEWATERING TO SILT BAG IN ROW 50' FROM STREM AS NEEDED

1.5.1d INSTALLATION OF BOX CULVERT
INSTALL PRECAST
INSTALL STREAM BEDDING MATERIAL
INSTALL STONE FILL AND GRUBBING MATERIALS
SEED AND MULCH OR EROSION FABRIC

1.5.1e REDIVERT WATER TO NEW CULVERT
REMOVE SHEET PILE COFFER DAM
REMOVE PUMP AND DISCHARGE PIPE

1.5.1f FINAL EPSC ELEMNTS
ONCE ALL SLOPES ARE BUILT INSTALL FINAL EPSC ELEMENTS PER PLAN, SEED, MULCH EROSION FABRIC
REMOVE TEMPORAY EPSC ELEMENTS UPON APPROVAL

1.5.2 OFF SITE ACTIVITIES
STAGING AREA HAS BEEN ESTABLISHED IN A FIELD OFF OLD ROUTE 30

1.6 CONTACT INFORMATION

1.6.1 ONSITE PLAN COORDINATOR
PRIMARY ONSITE CONTINUOUS REPRESENTATIVE
SCOTT SARGENT 802-380-9495
15 YEARS OF HEAVY CONSTRUCTION EXPERIENCE AND EROSION CONTROL IMPLEMENTATION AND INSPECTION

SECONDARY ONSITE REPRESENTATIVE PRIMARY PLAN PREPARER
CHARLIE EZEQUELLE 802-365-1944
15 YEARS OF HEAVY CONSTRUCTION EXPERIENCE WITH 5 YEARS OF EPSC PLAN DEVELOPMENT, IMPLEMENTATION AND INSPECTION

THIRD
DUANE FLETCHER 802-258-1863
20 + YEARS OF HEAVY CONSTRUCTION EXPERIENCE AND EROSION CONTROL IMPLEMENTATION AND INSPECTION

SECONDARY PLAN PREPARER
RON BELL 603-363-9966

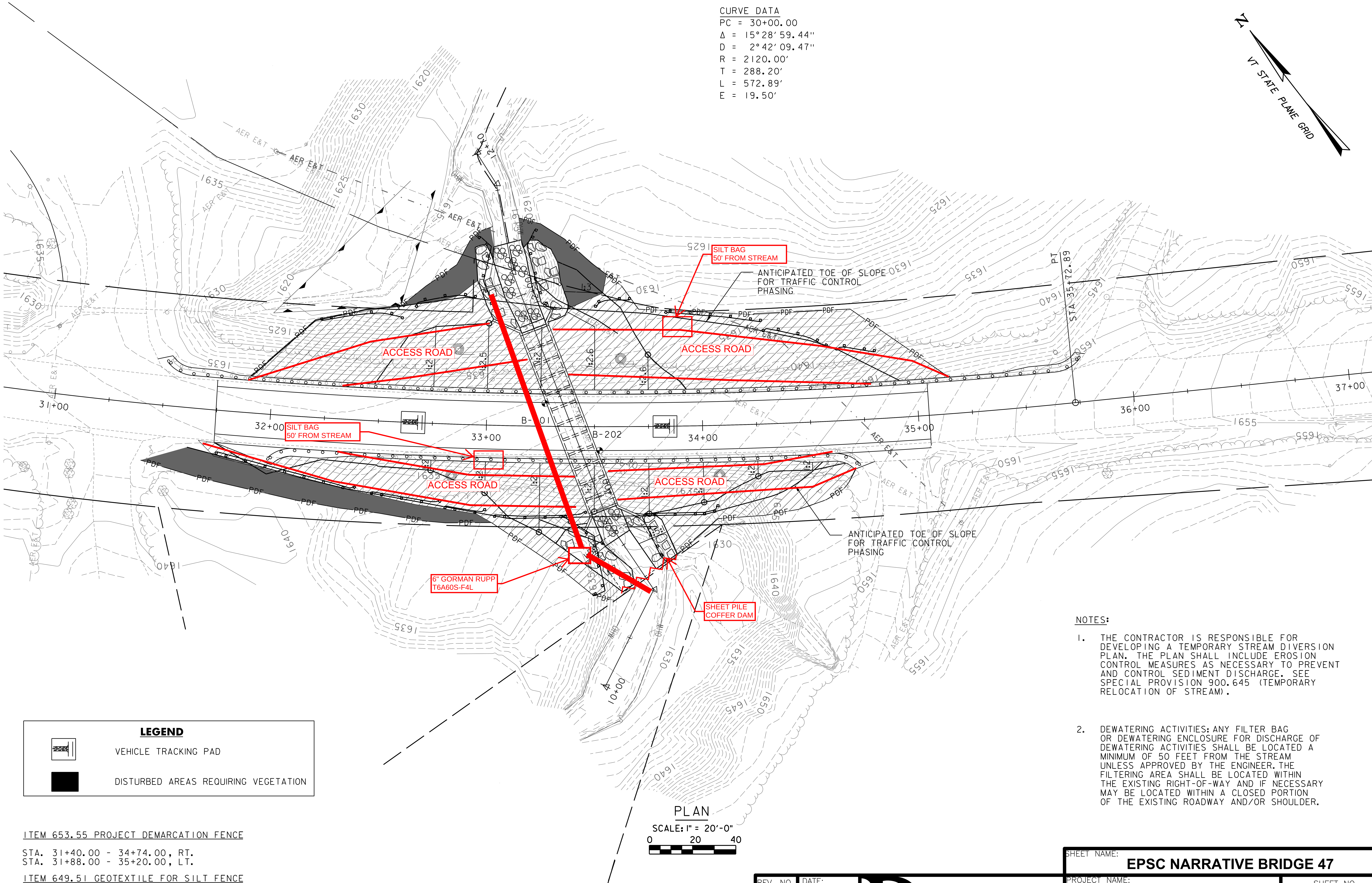
REV. NO.	DATE:

RENAUD BROS. INC.
285 Ft. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX.(802) 257-7508

SHEET NAME: **EPSC NARRATIVE BRIDGE 47**
PROJECT NAME: **WINHALL**
PROJECT NO: **STP CULV (31)**
DRAWN BY: CE
CHK'D BY:
DATE: **06/22/2015**
SHEET NO. **2** OF **8**

CURVE DATA

PC = 30+00.00
Δ = 15°28′59.44″
D = 2°42′09.47″
R = 2120.00′
T = 288.20′
L = 572.89′
E = 19.50′



PLAN

SCALE: 1" = 20′-0"

0 20 40

LEGEND

VEHICLE TRACKING PAD

DISTURBED AREAS REQUIRING VEGETATION

ITEM 653.55 PROJECT DEMARCATION FENCE

STA. 31+40.00 - 34+74.00, RT.
STA. 31+88.00 - 35+20.00, LT.

ITEM 649.51 GEOTEXTILE FOR SILT FENCE
SEE LOCATIONS, THIS SHEET.

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR DEVELOPING A TEMPORARY STREAM DIVERSION PLAN. THE PLAN SHALL INCLUDE EROSION CONTROL MEASURES AS NECESSARY TO PREVENT AND CONTROL SEDIMENT DISCHARGE. SEE SPECIAL PROVISION 900.645 (TEMPORARY RELOCATION OF STREAM).

2. DEWATERING ACTIVITIES: ANY FILTER BAG OR DEWATERING ENCLOSURE FOR DISCHARGE OF DEWATERING ACTIVITIES SHALL BE LOCATED A MINIMUM OF 50 FEET FROM THE STREAM UNLESS APPROVED BY THE ENGINEER. THE FILTERING AREA SHALL BE LOCATED WITHIN THE EXISTING RIGHT-OF-WAY AND IF NECESSARY MAY BE LOCATED WITHIN A CLOSED PORTION OF THE EXISTING ROADWAY AND/OR SHOULDER.

REV. NO.	DATE:

RENAUD BROS. INC.
283 FT. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX:(802) 257-7308

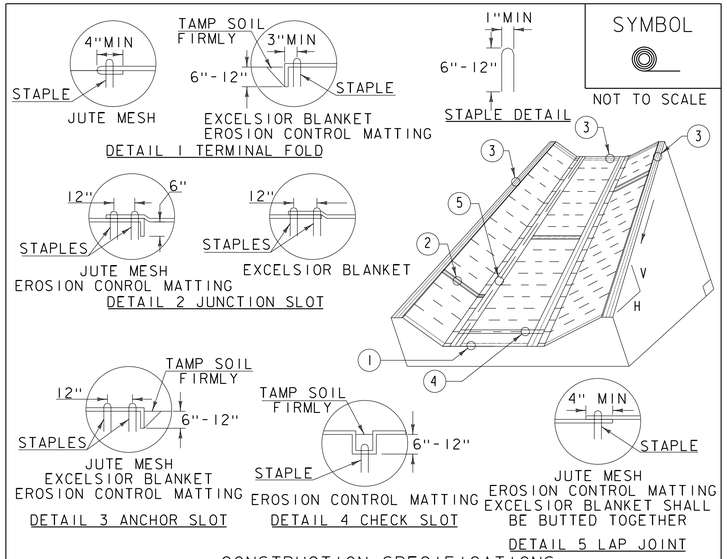
SHEET NAME: **EPSC NARRATIVE BRIDGE 47**

PROJECT NAME: **WINHALL**

PROJECT NO: **STP CULV (31)**

DRAWN BY: CE | CHK'D BY: | DATE: 06/22/2015

SHEET NO. 3 OF 7



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

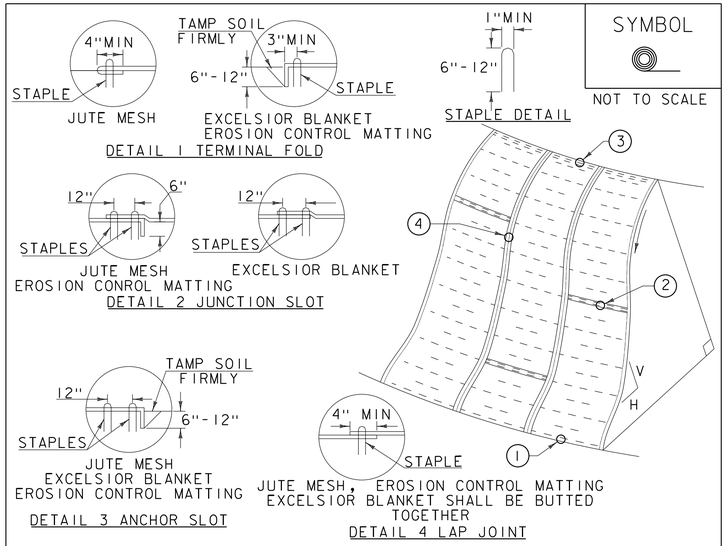
1. EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE, THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) DITCH

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS	
MARCH 8, 2007	JMF
APRIL 16, 2007	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

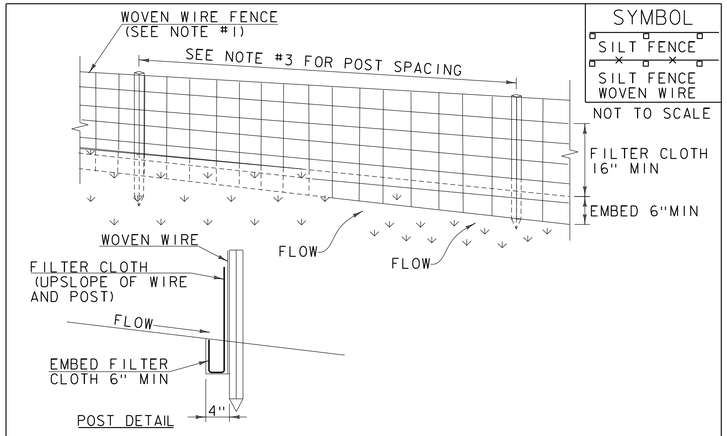
1. APPLY TO SLOPES GREATER THAN 3H: IV OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
2. APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
3. STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
4. DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION CONTROL PRODUCT (RECP) SIDE SLOPE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).

REVISIONS	
APRIL 16, 2007	JMF
JANUARY 13, 2009	WHF



SYMBOL
SILT FENCE
SILT FENCE WOVEN WIRE

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
2. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI100X, STABILINKA T140N OR APPROVED EQUIVALENT.
3. POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
4. WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS	
MARCH 21, 2008	WHF
DECEMBER 11, 2008	WHF
JANUARY 13, 2009	WHF

REV. NO.	DATE:

BRENAUD BROS. INC.
283 FT. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX. (802) 257-7508

SHEET NAME: **EROSION CONTROL DETAILS 1 BRIDGE 47**
PROJECT NAME: **WINHALL**
PROJECT NO: **STP CULV (31)**
DRAWN BY: CE
CHK'D BY:
DATE: **06/22/2015**
SHEET NO. **4** OF **8**

VAOT RURAL AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREEPING RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

VAOT URBAN AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREEPING RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	*FOLLOW*	PELLETIZED	*FOLLOW*
500 LBS/AC	*MANUFACTURER*	2 TONS/AC	*MANUFACTURER*

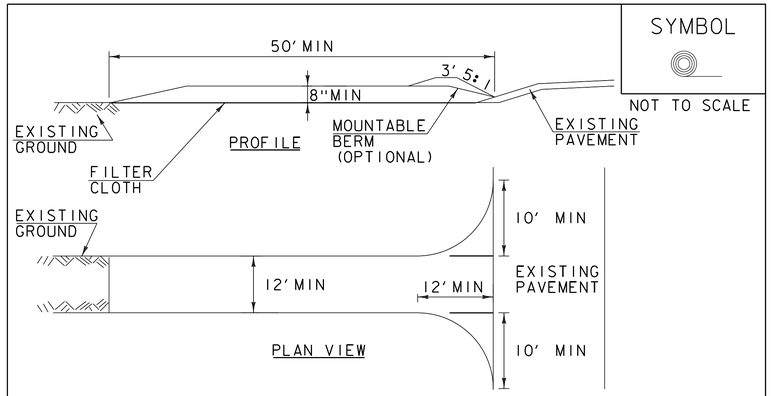
CONSTRUCTION GUIDANCE

1. RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
2. URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
3. ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
4. FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
5. HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
6. TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
7. HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
8. TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES

TURF ESTABLISHMENT

REVISIONS	
JUNE 23, 2009	WHF
JANUARY 15, 2010	WHF
FEBRUARY 16, 2011	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE SIZE- USE 1-4" STONE, RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
3. THICKNESS- NOT LESS THAN 8".
4. WIDTH- 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

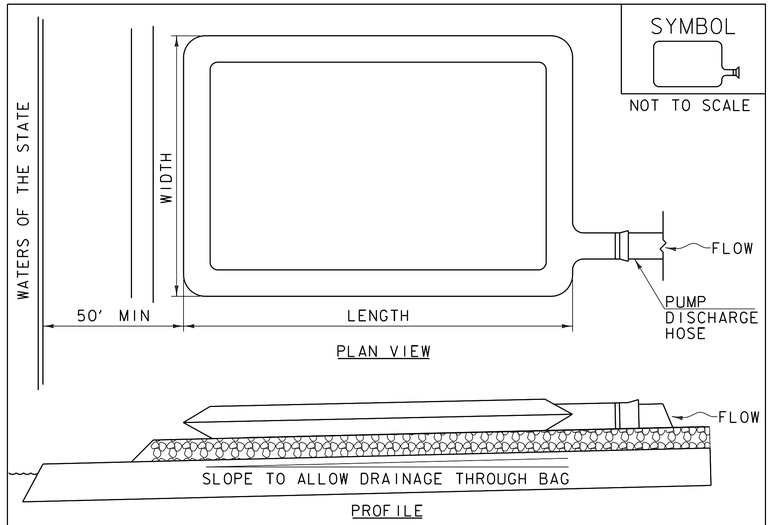
ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

STABILIZED CONSTRUCTION ENTRANCE

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF



SYMBOL

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. THE PRIMARY PURPOSE OF FILTER BAG IS TO RETAIN SILT, SAND, AND FINES DURING DEWATERING OPERATIONS.
2. FILTER BAGS SHALL BE INSTALLED ON A VEGETATED SLOPE GRADED TO ALLOW INCOMING WATER TO FLOW THROUGH THE BAG.
3. FILTER BAGS MAY ALSO BE PLACED ON COARSE AGGREGATE, STONE, OR HAYBALES TO INCREASE FILTRATION EFFICIENCY.
4. FILTER BAGS SHALL BE LOCATED A MINIMUM OF 50' FROM WATERS OF THE STATE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. THE NECK OF THE FILTER BAG SHALL BE STRAPPED TIGHTLY TO THE DISCHARGE HOSE.
6. A FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR ALLOW WATER TO PASS AT A REASONABLE RATE.
7. FILTER BAG SHALL BE DISPOSED OF AS APPROVED IN THE EPSC PLAN OR AS DIRECTED BY THE ENGINEER.

FILTER BAG

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR FILTER BAG (PAY ITEM 653.45) AND AS SPECIFIED IN THE CONTRACT.

REVISIONS	
MARCH 24, 2008	WHF
JANUARY 13, 2009	WHF

REV. NO.	DATE:

RENAUD BROS. INC.
283 FT. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX. (802) 257-7508

SHEET NAME: **EROSION CONTROL DETAILS 2 BRIDGE 47**

PROJECT NAME: **WINHALL**

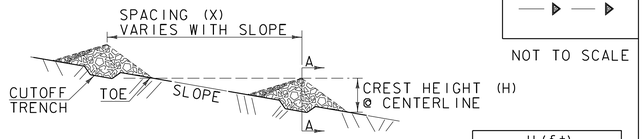
PROJECT NO: **STP CULV (31)**

SHEET NO. **5** OF **8**

DRAWN BY:	CHK'D BY:	DATE:
CE		06/22/2015

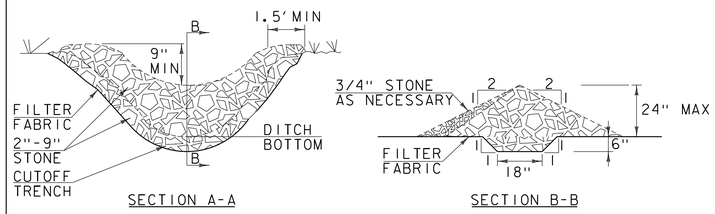
SYMBOL

NOT TO SCALE



PROFILE

$$X = \frac{H\,(ft)}{SLOPE\,(ft/ft)}$$



SECTION A-A

SECTION B-B

CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION.
2. CHECK DAMS SHALL BE SPACED SO THAT THE ELEVATION OF THE CREST OFTHE DOWNSTREAM DAM IS AT THE SAME ELEVATION AS THE TOE OF THE UPSTREAM DAM.
3. 3/4" FILTERING STONE MAY BE ADDED TO THE FACE OF THE CHECK DAM AS NECESSARY.
4. EXTEND THE STONE A MINIMUM OF 1.5' BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
5. PROTECT CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
6. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
7. MAXIMUM DRAINAGE AREA 2 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC
ORIGINALLY DEVELOPED BY USDA-NRCS
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CHECK DAM

NOTES:
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR TEMPORARY STONE CHECK DAM, TYPE I (PAY ITEM 653.25)

REVISIONS	
MARCH 21, 2008	WHF
JANUARY 8, 2009	WHF

REV. NO.	DATE:

RENAUD BROS. INC.
283 FT. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7383 FAX. (802) 257-7308

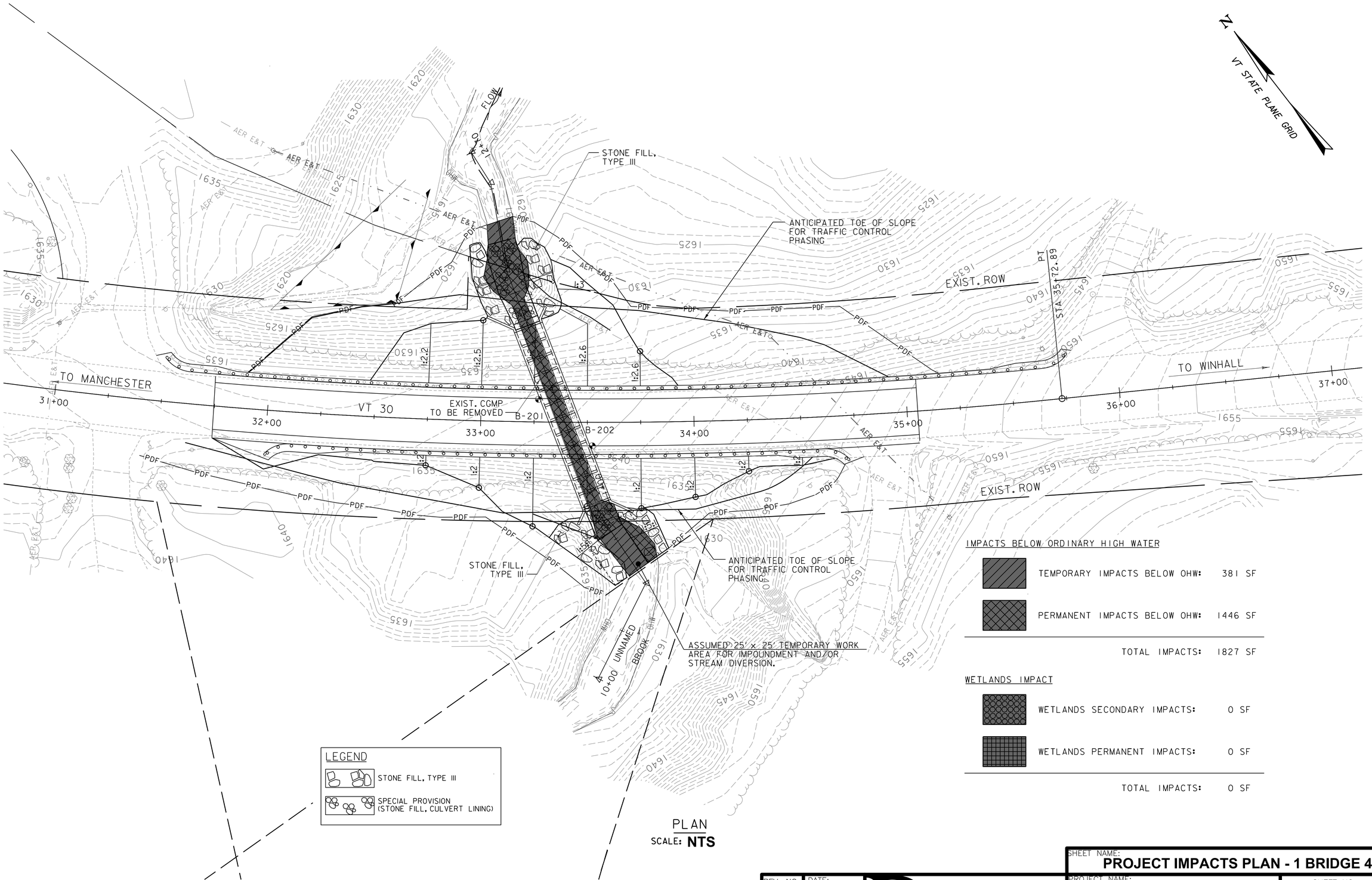
SHEET NAME: EROSION CONTROL DETAILS 3 BRIDGE 47

PROJECT NAME: WINHALL

PROJECT NO: STP CULV (31)

SHEET NO. 6 OF 8

DRAWN BY:	CHK'D BY:	DATE:
CE		06/22/2015



LEGEND

- STONE FILL, TYPE III
- SPECIAL PROVISION (STONE FILL, CULVERT LINING)

PLAN

SCALE: **NTS**

IMPACTS BELOW ORDINARY HIGH WATER

TEMPORARY IMPACTS BELOW OHW:	381 SF
PERMANENT IMPACTS BELOW OHW:	1446 SF
TOTAL IMPACTS:	1827 SF

WETLANDS IMPACT

WETLANDS SECONDARY IMPACTS:	0 SF
WETLANDS PERMANENT IMPACTS:	0 SF
TOTAL IMPACTS:	0 SF

REV. NO.	DATE:

RENAUD BROS. INC.
285 FT. BRIDGMAN RD. VERNON VT., 05354
PH. (802) 257-7585 FAX. (802) 257-7508

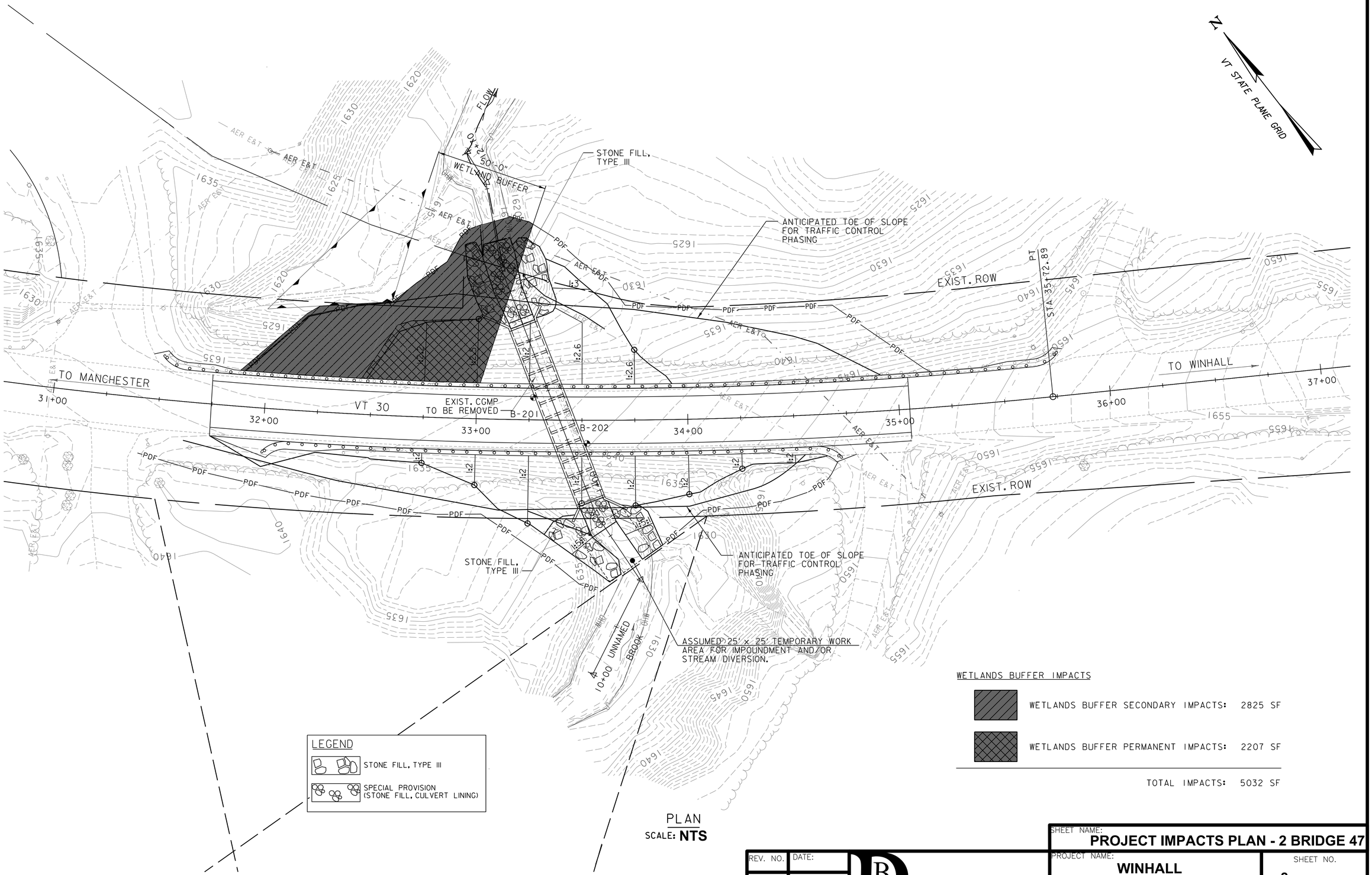
SHEET NAME: **PROJECT IMPACTS PLAN - 1 BRIDGE 47**

PROJECT NAME: **WINHALL**

PROJECT NO: **STP CULV (31)**

DRAWN BY: CE | CHK'D BY: | DATE: **06/22/2015**

SHEET NO. **7** OF **8**



LEGEND

- STONE FILL, TYPE III
- SPECIAL PROVISION (STONE FILL, CULVERT LINING)

WETLANDS BUFFER IMPACTS

WETLANDS BUFFER SECONDARY IMPACTS:	2825 SF
WETLANDS BUFFER PERMANENT IMPACTS:	2207 SF
TOTAL IMPACTS:	5032 SF

PLAN

SCALE: **NTS**

REV. NO.	DATE:

RENAUD BROS. INC.
283 Ft. Bridgman Rd. Vernon Vt., 05354
Ph. (802) 257-7383 Fax (802) 257-7308

SHEET NAME: **PROJECT IMPACTS PLAN - 2 BRIDGE 47**

PROJECT NAME: **WINHALL**

PROJECT NO: **STP CULV (31)**

SHEET NO. **8** OF **8**

DRAWN BY:	CHK'D BY:	DATE:
CE		06/22/2015